UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,633	12/19/2005	Sunhee Kim	4820-014	6111

20575   7590   02/05/2008
MARGER JOHNSON & MCCOLLOM, P.C.
210 SW MORRISON STREET, SUITE 400
PORTLAND, OR 97204

EXAMINER
COLUCCI, MICHAEL C

ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
02/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/561,633	KIM, SUNHEE
	Examiner	Art Unit	
	Michael C. Colucci	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *12/19/2005*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 1 recites the limitation "the exceptional pronunciation dictionary 2" in claim

1 line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1 and 2 rejected under 35 U.S.C. 103(a) as being unpatentable over

Lewis et al. US 6119085 A (hereinafter Lewis) in view of Yi US 5502790 A (hereinafter

Yi) and further in view of Bates et al. US 6976214 B1 (hereinafter Bates).

Re claim 1, Lewis teaches a method of generating an exceptional pronunciation

dictionary for automatic pronunciation generator in Korean (col 1 line 66 – col 2 line 6)

comprises the steps of:

setting phoneme conditions where the exceptional pronunciations are observed

in Korean (col 1 line 55-61);

extracting words in the exceptional phoneme conditions from a general dictionary

so as to compile an exceptional condition reference dictionary 1, and creating an

exceptional pronunciation dictionary 1 by reviewing words of the exceptional condition

reference dictionary 1 and by extracting the words having the exceptional pronunciation

(col 2 line 29-51);

compiling the exceptional condition vocabulary dictionary 1 by extracting Korean

Eojols, which includes the words of the exceptional condition vocabulary 1 (col 2 line

29-51);

comparing the exceptional condition vocabulary dictionary 1 with the exceptional

condition reference dictionary 1 (col 2 line 29-51).

However, Lewis fails to teach generating the exceptional pronunciation dictionary

2 (Yi col 7 lines 10-30 & Fig. 2) by including the steps of:

editing an exceptional condition vocabulary dictionary 2 (Yi col 7 lines 10-30 &

Fig. 2)

dividing sentences of text corpus by Korean Eojols after analyzing the sentences

(Yi col 12 lines 20-28);

reviewing the words of the exceptional condition vocabulary dictionary 2 (Yi col 7

lines 10-30 & Fig. 2).

Yi teaches a central control unit 7 stores each target HMM created by the HMM

trainer 4 in a second dictionary 10 in the memory 6, together with the target vocabulary

item represented by the target HMM. The target vocabulary item may now be stored as

ordinary text, rather than as a phoneme sequence. The result is a second dictionary 10

comprising one target HMM for each item in the target vocabulary. The system uses the second dictionary 10 to recognize utterances which are presumed to be from the target vocabulary. This step is carried out by the speech analyzer 1, the vector quantizer 2, and the HMM recognizer 5. When an utterance is received, the speech analyzer 1 and vector quantizer 2 reduce it to a sequence of labels, in the same way that they reduced the training vocabulary to label sequences. Next the HMM recognizer 5 computes, for each HMM in the second dictionary 10, the probability that the HMM would output the particular sequence of labels. Then the HMM recognizer 5 selects the HMM giving maximum probability, and recognizes the utterance as the corresponding item in the target vocabulary.

However, Lewis in view of Yi fails to teach removing repeated words (Bates col 5 lines 57-67);

Bates teaches a text enhancement and text editing program, where a composition program 14 receives user selection of a term displayed in the "with" box 56a, b, i.e., the user highlighted a term in the "with" box and then selected the "select" button 58. In response, the composition program 14 (at block 122) would delete the highlighted repeated term i in the text displayed in text box 52a, b and replace the removed term with the selected term. The composition program 14 would then proceed (at block 124) back to block 106 to allow the user to change the next repeated term (i+1)th term in the text.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention a language pronunciation dictionary having words parse, extracted,

and checked against conditions prior to be combined into a second dictionary, where

repeated words are to be deleted. Deleting repeated words allows for a user to

substitute another word in place of a repeated word. Additionally, creating a language

dictionary using rules for pronunciation would reduce inconsistencies in pronunciation

when the creation of an updated dictionary takes place, where the process can be

repeatedly performed to encompass a wider range of words.

Re claim 2, Lewis teaches an exception vocabulary and dictionary (col 2 line 29-

51)

However, Lewis teaches the method according to the claim 1 wherein the step of

the exceptional pronunciation dictionary 2 comprises of the step of compiling the

reference dictionary 2 in the exceptional conditions (Yi col 7 lines 10-30 & Fig. 2) by

adding the vocabulary dictionary 2 to the reference dictionary 1, in order to compile an

exceptional pronunciation dictionary from text corpus (Yi col 7 lines 35-46).

Yi teaches a central control unit 7 stores each target HMM created by the HMM

trainer 4 in a second dictionary 10 in the memory 6, together with the target vocabulary

item represented by the target HMM. The target vocabulary item may now be stored as

ordinary text, rather than as a phoneme sequence. The result is a second dictionary 10

comprising one target HMM for each item in the target vocabulary. The system uses

the second dictionary 10 to recognize utterances which are presumed to be from the

target vocabulary. This step is carried out by the speech analyzer 1, the vector quantizer 2, and the HMM recognizer 5. When an utterance is received, the speech analyzer 1 and vector quantizer 2 reduce it to a sequence of labels, in the same way that they reduced the training vocabulary to label sequences. Next the HMM recognizer 5 computes, for each HMM in the second dictionary 10, the probability that the HMM would output the particular sequence of labels. Then the HMM recognizer 5 selects the HMM giving maximum probability, and recognizes the utterance as the corresponding item in the target vocabulary.

Additionally, Yi teaches the target vocabulary can be expanded without acquiring additional training data. It is only necessary to enter the phoneme sequences corresponding to new target vocabulary items, create new target HMMs by concatenating the existing triphone, diphone, and phoneme HMMs in the first dictionary 9, and add the new target HMMs to the second dictionary 10. A system that was originally trained to recognize isolated words, for example, can be expanded to recognize phrases or longer units of speech.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention compiling a second dictionary by adding new vocabulary to an exception pronunciation dictionary. Adding new vocabulary would allow for a constantly expanding learning vocabulary set, where a higher probability of pronunciation and translation will result to the increased vocabulary based on phoneme sequences, which would reduce the chances of translation and pronunciation error prior to user review.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. US 5201000 A, US 7246124 B2.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael C. Colucci whose telephone number is (571)-

270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-

Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER

Michael Colucci Jr.
Patent Examiner
AU 2626
(571)-270-1847
Michael.Colucci@uspto.gov